

REMARKS

As of the February 14, 2003 Office Action, Claims 1-10 are pending, Claims 11 and 12 are withdrawn from consideration. Claims 1-10 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1-10 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,803,761 to Mochizuki in view of U.S. Patent No. 3,158,421 to Hasenauer. The Examiner has also objected to the drawings under 37 CFR 1.83(a) in that they do not show the cross section of the elastic member and the supporter as made of rubber.

The first Office Action dated August 30, 2002 required that the applicant restrict prosecution to one of the noted Species 1-9. Species 2 was elected (with traverse) reading on Figures 3, 4, 6, and 8. At that time, it was thought that Claims 1-10 read on Species 2. Now correctly understood, Species 6 reading on Figures 16-18 contained matter relating to an elastic member and supporter made of rubber which directly corresponds to Claim 10. To address the Examiner's drawing objection under 37 CFR 1.83(a), the applicant cancels Claim 10.

In view of the cancellation of claim 10, the applicant believes that the drawings now show every feature of the invention specified in the claims and that drawing corrections or corrected drawings are not required.

The Examiner rejects Claims 1-10 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to

make and/or use the invention. To improve clarity of the terms and features of the claims for the Examiner, the applicant sets forth below a copy of Claim 1 with reference numerals:

Claim 1. (Amended) A connector (1) for accommodating therein an edge portion of a plate object (4) and for providing electrical connections to terminals formed on the edge portion of the plate object, comprising:

a housing (2) made of metal and having first and second planes (2A1,2A2) opposite to each other in a first direction, the first and second planes having a predetermined space therebetween;

an elastic member (2F) arranged within the predetermined space and connected to the first plane, the elastic member having a first portion (2F1) on top thereof in the first direction, the first portion, when being pushed in the first direction, causing [an] first elastic reaction force in the first direction;

an elastic supporter (2G) arranged within the predetermined space and connected to the second plane, the elastic supporter having a second portion (2G1) on top thereof in the first direction, the second portion being located with an interval left between the first and second portions in a second direction perpendicular to the first direction, the second portion, when being pushed in the first direction, causing second elastic reaction force in the first direction;

a film contact (3) comprising an insulator film (3A) and electrical contacts (3B) corresponding to the terminals of the plate object, the insulator film having first and second surfaces, the electrical contacts being formed on the first surface of the insulator film, the second surface being fixed on the first and second portions so that the electrical contacts are arranged on at least one of the first and second portions via the insulator film and, when the edge portion of the plate object is inserted between the first and second portions in a third direction oblique to the first and second directions and the plate object is then tilted to be substantially parallel with the first and second planes, are connected to terminals of the plate object with being in press contact with the terminals by a combination of the first elastic reaction force and the second elastic reaction force; and

holding means (2C,2D) for holding parts of the plate object in the first direction when the plate object is tilted.

In re Appln. of Yasufumi YAHIRO
Application No. 10/017,633

To address the Examiner's rejection of Claims 1-10 under 35 U.S.C. § 103(a) as obvious over Mochizuki in view of Hasenauer, the applicant points out that the connector as taught in amended claim 1 has a housing made of metal. Since the housing is made of metal, it is not deformed if it is heated while carrying out a soldering operation. Therefore, it is readily possible to mount the connector to a circuit board or the like. Additionally, the film contact (3) is brought in press contact with the plate object (4) by the elastic member (2F) first portion (2F1) and the elastic supporter (2G) second portion (2G1) as shown in Figure 4. The method of press contact (inserting the plate object and tilting) positively connects the film contacts to the plate object and prevents abrasion or breakage of the film contacts.

Neither Mochizuki or Hasenauer teaches or suggests a housing made of metal. Mochizuki discloses a connector comprising a housing and a plurality of metal contacts held by the housing. In the connector, the housing is made of plastic material to insulate the metal contacts. Hasenauer discloses a connector for connecting a flexible cable to a circuit board. The connector comprises a body member of insulating material and pairs of contact springs held by the body member for pressing the flexible cable to the circuit board.

Furthermore, the combination of Mochizuki and Hasenauer neither teaches or suggests that a film contact is brought in press contact with a plate object by an elastic member and elastic supporter. The Examiner in Paragraph 6 of the Office Action refers to reference number 3 in Hasenauer as a film contact when it is actually a "flexible coplanar multi-conductor cable" (Column 3, lines 31-32) and not an insulator film with electrical contacts deposited thereupon. Additionally there is no suggestion in Mochizuki to employ a "flexible coplanar multi-conductor cable" in conjunction with or instead of contacts 3 and 4.

In re Appln. of Yasufumi YAHIRO
Application No. 10/017,633

New claims 13 and 14 incorporating previously disclosed matter have been added. As with Claim 1, Claims 13 and 14 each disclose housings made of metal and film contacts in press contact with the plate object, but with different limitations.

Conclusion

The application is now considered in proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



Perry J. Hoffman, Reg. No. 37,150
David R. Morris, Reg. No. 53,348
MICHAEL BEST & FRIEDRICH LLC
401 North Michigan Avenue
Suite 1900
Chicago, Illinois 60611
(312) 222-0800 (telephone)
(312) 222-0818 (facsimile)

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